

**AMENDMENT AND PRESENTATION OF CLAIMS**

Please replace all prior claims in the present application with the following claims, in which claims 4, 6, 14, 15 (2<sup>nd</sup> occurrence), 24, 26, 34 and 36 are canceled without prejudice or disclaimer, claims 1, 5, 7, 8, 11, 15 (1<sup>st</sup> occurrence), 17, 21, 25, 27, 31, 35, and 37 are currently amended, and claims 41-44 are newly presented.

1. (Currently Amended) A method of allocating system capacity to a plurality of terminals in a communication switching system, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, the method comprising:

receiving a bandwidth request message from one of the terminals, the one terminal being configured to submit the bandwidth request message that selectively requests capacity from the provisioned portion and the unprovisioned portion based upon a type of traffic received by the one terminal;

allocating the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals;

selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal; and

selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals.

2. (Original) The method according to Claim 1, wherein the partitions and sub-partitions of the capacity specify a maximum transmission rate for the corresponding terminals.

3. (Original) The method according to Claim 1, further comprising:  
  
configuring the partition and sub-partitions of the capacity based upon a prescribed time-of-day profile.

4. (Canceled)

5. (Currently Amended) The method according to Claim ~~[[4]]~~ 1, wherein the bandwidth request message specifies a pool identification (ID) corresponding to one of the partitions of the provisioned portion of the capacity.

6. (Canceled)

7. (Currently Amended) A method of allocating system capacity to a plurality of terminals in a communication switching system including a satellite network, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, the method comprising:

allocating the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals;

selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal; and

selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals.

~~The method according to Claim 6,~~ wherein each of the terminals is configured to receive high volume traffic and to transmit the traffic to a satellite of the satellite network in response to at least one of the allocating steps.

8. (Currently Amended) The method according to Claim [[4]] 1, wherein the partitions and sub-partitions in the provisioned portion have corresponding queues, the method further comprising:

storing the bandwidth request message in one of the queues.

9. (Original) The method according to Claim 8, further comprising:

maintaining an uplink table that contains uplink threshold values, and a downlink table that contains downlink threshold values for each of the queues that correspond to the pools.

10. (Original) The method according to Claim 9, wherein the sub-partitions within each of the partitions are equal in quantity, the method further comprising:

reinstating a displaced bandwidth request by manipulating pointers associated with the queues.

11. (Currently Amended) A communication switching system comprising:

a plurality of terminals configured to request allocations of capacity of the system, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, wherein the terminals are further configured to transmit a bandwidth request message that selectively requests capacity from the provisioned portion and the unprovisioned portion based upon a type of traffic received by the one terminal; and

a control computer communicating with the plurality of terminals and being configured to allocate the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of

terminals, and remaining sub-partitions are associated with the sub-pools of terminals, the control computer selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal, and selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals.

12. (Original) The system according to Claim 11, wherein the partitions and sub-partitions of the capacity specify a maximum transmission rate for the corresponding terminals.

13. (Original) The system according to Claim 11, wherein the partition and sub-partitions of the capacity are based upon a prescribed time-of-day profile.

14. (Canceled)

15. (Currently Amended) The system according to Claim ~~14~~ 11, wherein the bandwidth request messages specify pool identifications (IDs) corresponding to the partitions of the provisioned portion of the capacity.

15. (Canceled)

17. (Currently Amended) A communication switching system comprising:  
a plurality of terminals configured to request allocations of capacity of the system  
that includes a satellite network, the capacity being partitioned into a provisioned  
portion and an unprovisioned portion, a portion of the terminals constituting a pool  
having a plurality of sub-pools; and  
a control computer communicating with the plurality of terminals and being  
configured to allocate the provisioned portion of the capacity to the plurality of sub-  
pools of the terminals, the provisioned portion of the capacity being arranged into sub-  
partitions, wherein one of the sub-partitions is not associated with the sub-pools of  
terminals, and remaining sub-partitions are associated with the sub-pools of terminals,  
the control computer selectively allocating available capacity from the sub-partitions to  
one of the sub-pool terminals to permit overflow of traffic from the one sub-pool  
terminal, and selectively allocating the unprovisioned portion of the capacity to the pool  
to permit overflow of traffic from a terminal within the pool and to a terminal that is not a  
part of the pool of terminals,  
~~The system according to Claim 15,~~ wherein each of the terminals is configured to  
receive high volume traffic and to transmit the traffic to a satellite of the satellite network  
in response to at least one of the allocations.

18. (Original) The system according to Claim 15, further comprising:

a plurality of queues corresponding to the partitions and sub-partitions in the provisioned portion, the bandwidth request message being stored in one of the queues.

19. (Original) The system according to Claim 15, wherein the control computer maintains an uplink table that contains uplink threshold values, and a downlink table that contains downlink threshold values for each of the queues that correspond to the pools.

20. (Original) The system according to Claim 19, wherein the sub-partitions within each of the partitions are equal in quantity, the control computer reinstating a displaced bandwidth request by manipulating pointers associated with the queues.

21. (Currently Amended) A computer-readable medium carrying one or more sequences of one or more instructions for allocating system capacity to a plurality of terminals in a communication switching system, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

receiving a bandwidth request message from one of the terminals, the one terminal being configured to submit the bandwidth request message that selectively

requests capacity from the provisioned portion and the unprovisioned portion based upon a type of traffic received by the one terminal;

allocating the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals;

selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal; and

selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals.

22. (Original) The computer readable medium according to Claim 21, wherein the partitions and sub-partitions of the capacity specify a maximum transmission rate for the corresponding terminals.

23. (Original) The computer readable medium according to Claim 21, wherein the one or more processors further perform the step of:

configuring the partition and sub-partitions of the capacity based upon a prescribed time-of-day profile.

24. (Canceled)



25. (Currently Amended) The computer readable medium according to Claim 24 21, wherein the bandwidth request message in the receiving step specifies a pool identification (ID) corresponding to one of the partitions of the provisioned portion of the capacity.

26. (Canceled)

27. (Currently Amended) A computer-readable medium carrying one or more sequences of one or more instructions for allocating system capacity to a plurality of terminals in a communication switching system including a satellite network, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

allocating the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals;

selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal; and

selectively allocating the unprovisioned portion of the capacity to the pool to  
permit overflow of traffic from a terminal within the pool and to a terminal that is not a  
part of the pool of terminals

~~The computer readable medium according to Claim 26~~, wherein each of the terminals is configured to receive high volume traffic and to transmit the traffic to a satellite of the satellite network in response to at least one of the allocating steps.

28. (Original) The computer readable medium according to Claim 25, wherein the partitions and sub-partitions in the provisioned portion have corresponding queues, and the one or more processors further perform the step of:

storing the bandwidth request message in one of the queues.

29. (Original) The computer readable medium according to Claim 28, wherein the one or more processors further perform the step of:

maintaining an uplink table that contains uplink threshold values, and a downlink table that contains downlink threshold values for each of the queues that correspond to the pools.

30. (Original) The computer readable medium according to Claim 29, wherein the sub-partitions within each of the partitions are equal in quantity, the one or more processors further performing the step of:

reinstating a displaced bandwidth request by manipulating pointers associated with the queues.

31. (Currently Amended) A communication switching system for allocating system capacity to a plurality of terminals, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, the system comprising:

means for receiving a bandwidth request message from one of the terminals, the one terminal being configured to submit the bandwidth request message that selectively requests capacity from the provisioned portion and the unprovisioned portion based upon a type of traffic received by the one terminal;

means for allocating the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals;

means for selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal;  
and

means for selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals.

32. (Original) The system according to Claim 31, wherein the partitions and sub-partitions of the capacity specify a maximum transmission rate for the corresponding terminals.

33. (Original) The system according to Claim 31, further comprising:  
  
means for configuring the partition and sub-partitions of the capacity based upon a prescribed time-of-day profile.

34. (Canceled)

35. (Currently Amended) The system according to Claim ~~34~~ 31, wherein the bandwidth request message specifies a pool identification (ID) corresponding to one of the partitions of the provisioned portion of the capacity.

36. (Canceled)

37. (Currently Amended) A communication switching system for allocating system capacity to a plurality of terminals, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, the system comprising:

means for allocating the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals, the terminals communicating over a satellite network;

means for selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal;  
and

means for selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals

~~The system according to Claim 32,~~ wherein each of the terminals is configured to receive high volume traffic and to transmit the traffic to a satellite of the satellite network in response to at least one of the allocations.

38. (Original) The system according to Claim 5, wherein the partitions and sub-partitions in the provisioned portion have corresponding queues, the system further comprising:

means for storing the bandwidth request message in one of the queues.

39. (Original) The system according to Claim 38, further comprising:

means for maintaining an uplink table that contains uplink threshold values, and a downlink table that contains downlink threshold values for each of the queues that correspond to the pools.

40. (Original) The system according to Claim 39, wherein the sub-partitions within each of the partitions are equal in quantity, the system further comprising:

means for reinstating a displaced bandwidth request by manipulating pointers associated with the queues.

41. (New) A method of apportioning bandwidth among a plurality of terminals, the method comprising:

receiving a bandwidth request from one of the terminals for capacity, wherein the capacity includes a provisioned portion and an unprovisioned portion, and a portion of the terminals are designated as a pool that includes a plurality of sub-pools, the provisioned portion being allocated to the sub-pools and being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools and another one of the sub-partitions is associated with the sub-pools; and

allocating available capacity from the sub-partition to one of the sub-pools including the one terminal to permit overflow of traffic based on the bandwidth request, wherein the provisioned portion is allocated to the pool for overflow of traffic for any one of the terminals.

42. (New) An apparatus for supporting apportionment of bandwidth among a plurality of terminals, the apparatus comprising:

means for receiving a bandwidth request from one of the terminals for capacity, wherein the capacity includes a provisioned portion and an unprovisioned portion, and a portion of the terminals are designated as a pool that includes a plurality of sub-pools, the provisioned portion being allocated to the sub-pools and being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools and another one of the sub-partitions is associated with the sub-pools; and

means for allocating available capacity from the sub-partition to one of the sub-pools including the one terminal to permit overflow of traffic based on the bandwidth request, wherein the provisioned portion is allocated to the pool for overflow of traffic for any one of the terminals.

43. (New) A method for providing bandwidth apportionment, the method comprising:

receiving a bandwidth request from one of a plurality of terminals for capacity;

determining whether the bandwidth request specifies a capacity partition parameter including a group partition, a group sub-partition, or an un-allocated partition; and

apportioning bandwidth capacity to satisfy the bandwidth request based on the capacity partition parameter using a multi-phase allocation scheme to permit servicing of overflow traffic from the one terminal, wherein the multi-phase allocation scheme

sequentially allocates the capacity on a sub-group basis, a group basis, and un-allocated partition basis, respectively.

44. (New) An apparatus for providing bandwidth apportionment, the apparatus comprising:

means for receiving a bandwidth request from one of the terminals for capacity;

means for determining whether the bandwidth request specifies a capacity partition parameter including a group partition, a group sub-partition, or an un-allocated partition; and

means for apportioning bandwidth capacity to satisfy the bandwidth request based on the capacity partition parameter using a multi-phase allocation scheme to permit servicing of overflow traffic from the one terminal, wherein the multi-phase allocation scheme sequentially allocates the capacity on a sub-group basis, a group basis, and un-allocated partition basis, respectively.